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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,760	10/22/2003	Yuichi Yamashita	520.35492CC2	6022

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EXAMINER

SULLIVAN, JULIANNE M

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/689,760	YAMASHITA ET AL.	
	Examiner	Art Unit	
	Julianne M. Sullivan	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/875,081.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/22/03; 1/6/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 7-10 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Chance et al. (U.S. Patent No. 5,954,053).

Chance et al. teaches an optical measurement instrument for a living body including light sources for applying light of at least one wavelength in the visible-infrared range to a plurality of incident positions on a surface of the living body, light detectors for detecting transmitted light at a plurality of detection positions, operation means for determining and outputting a type of output signal, based on an intensity of said transmitted light and pre-stored reference data, memory means for storing the pre-stored reference data, external equipment for executing a functional operation based on the type of output signal, where the light sources and detectors are supported by a cap-shaped probe, where optical fibers for the light sources and detectors are fixedly mounted in respective corresponding holes of the probe independently of one-another, where the transmitted light corresponds to a change in concentration of oxy-hemoglobin, deoxy-hemoglobin or total hemoglobin, where the change has a value that is changed to an integrated value, a mean value or a rate of change value within an arbitrary time, where the living body is a brain of a human being and where the light source includes a plurality of light sources for

outputting to the plurality of incident positions and a light modulation means modulates the intensity of the light output (col. 1, lines 8-10, col. 2, lines 16-29 and 56-62, col. 3, lines 6-17 and 40-53, col. 4, lines 40-67, col. 5, lines 1-67, col. 6, lines 18-35, col. 26, lines 27-40 and Fig. 24).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chance et al. in view of Gevins et al. (U.S. Patent No. 4,736,751).

Chance et al. teaches all of the features of the present invention, including that the incident positions and the detection positions are alternately disposed and middle points between the incident and detection positions are measurement positions (col. 25, lines 45-67 and col. 26, lines 1-3 and 27-40), except for expressly disclosing that they are arranged in square lattice form. In a related field of endeavor, Gevins et al. teaches a head scanning network in a square lattice arrangement (col. 5, lines 62-68, col. 6, lines 1-2 and Figs. 6 and 10). It would have been obvious to one of ordinary skill in the art at the time of the invention to have arranged the incident and detection positions in a square lattice in order to provide known, regular locations for simplified calculations.

5. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chance et al. in view of Gevins et al. as applied to Claims 1 and 13 above, and further in view of Block (U.S. Patent No. 5,321,265).

Chance et al. in view of Gevins et al. teaches all of the features of the present invention except for expressly disclosing that the operation means determines the types of output signal based on the Mahalanobis distances and/or neural network processing of the intensity of the transmitted light and the pre-stored reference data. In the same field of endeavor, Block teaches a non-invasive testing method using a neural network for analysis of bodily tissues (col. 3, lines 38-49, col. 5, lines 25-29 and col. 7, lines 4-27). It would have been obvious to one of ordinary skill in the art at the time of the invention to have used a neural network to process the data acquired in the system of Chance et al. in order to simplify or reduce calibration procedures (see for motivation Block at col. 9, lines 61-68).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chance et al. in view of Block.

Chance et al. teaches all of the features of the present invention except that the operation means determines the types of output signal based on the Mahalanobis distances and/or neural network processing of the intensity of the transmitted light and the pre-stored reference data. Block teaches a non-invasive testing method using a neural network for analysis of bodily tissues (col. 3, lines 38-49, col. 5, lines 25-29 and col. 7, lines 4-27). As discussed above, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a neural network to process the data acquired in the system of Chance et al. in order to simplify or reduce calibration procedures (see for motivation Block at col. 9, lines 61-68).

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chance et al. in view of Gevins et al. as applied to Claim 13 above, and further in view of Saadatmanesh et al. (U.S. Patent No. 5,396,571).

Chance et al. in view of Gevins et al. teaches all of the features of the present invention except for expressly disclosing that the light source is a single light source with a plurality of transmission lines for transmitting light to the plurality of incident positions. In a related field of endeavor, Saadatmanesh et al. teaches an optical device where light energy is provided from a single source into a plurality of transmission lines (col. 4, lines 5-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the light source of Saadatmanesh et al. in the system of Chance et al. in order to provide improved efficiency of transmission (see Saadatmanesh et al. at col. 1, lines 9-16).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tucker (U.S. Patent No. 5,291,888) teaches a related lattice sensor net.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julianne M. Sullivan whose telephone number is 571-272-6084. The examiner can normally be reached on Monday through Friday 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3737

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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